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Indian Standard

SPECIFICATION FOR FOUNDRY NICKEL

(First Revision)

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MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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July 1970

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SPECIFICATION FOR FOUNDRY NICKEL

(First Revision)

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Indian Standard

SPECIFICATION FOR FOUNDRY NICKEL

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 30 May 1970, after the draft finalized by the Ferro Alloys Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 Foundry nickel is generally used in ferrous foundries. For this purpose foundry nickel is provided in the form of shot for convenience of addition to molten iron at the furnace spout or in the ladle. It contains silicon, iron and carbon which lower its melting point considerably below that of nickel and thus help in the rapid solution even at a lower temperature of molten iron. Foundry nickel is also available in the form of ingots weighing 2 to 3 kg each.

0.3 This standard was originally published in 1963. As a result of experience gained during these years, it has been decided to delete the minimum limits for carbon in the chemical composition of foundry nickel in this revision.

0.4 This standard contains clauses **3.1.1** and **4.1** which call for an agreement between the purchaser and the supplier.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS: 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers the requirements for foundry nickel used in the iron and steel industry.

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*Rules for rounding off numerical values (*revised*).

2. SUPPLY OF MATERIAL

2.1 General requirements relating to the supply of foundry nickel shall be as laid down in IS:1387-1967*.

3. CHEMICAL COMPOSITION

3.1 The chemical composition of the material, when determined in accordance with IS:2390-1967†, shall be as given below:

Constituent	*Percent*
Nickel (including cobalt)	90·0 to 92·0
Silicon	4·5 to 6·0
Iron, *Max*	3·0
Ni (including cobalt) + Si + Fe	99·0, *Min*
Sulphur, *Max*	0·10
Cobalt, *Max*	0·50

3.1.1 The supply of material of a composition with limits outside those specified in **3.1** shall be subject to agreement between the purchaser and the supplier.

4. PACKING

4.1 The material shall be supplied packed in suitable containers in quantities mutually agreed to between the purchaser and the supplier.

5. MARKING

5.1 The material shall be marked with supplier's name or trade-mark.

5.1.1 The material may be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

6. SAMPLING

6.1 The material shall be sampled in accordance with IS:1472 (Part II)-1962‡.

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*General requirements for the supply of metallurgical materials (*first revision*).

†Methods for chemical analysis of foundry nickel.

‡Methods of sampling ferro-alloys, Part II.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	*Unit*	*Symbol*
Length	metre	m
Mass	killogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	*Unit*	*Symbol*
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	*Unit*	*Symbol*	*Conversion*
Force	newton	N	1 N = 1 kg. 1 m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2

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